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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/849,521

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Shigeo Ide

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/849,521	Applicant(s) IDE, SHIGEO	
	Examiner Stephen G. Sherman	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities:

The claim states: "wherein said conversion function achieves a fixed value said application frequency in a range in which said average brightness is lower than a prescribed brightness level." The examiner suggests changing the claims to state: "wherein said conversion function achieves a fixed value when said application frequency is in a range in which said average brightness is lower than a prescribed brightness level"

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriyama et al. (US 2002/0126139) in view of Slupe (US 6,862,022).

Regarding claim 12, Kuriyama et al. disclose a plasma display panel driving method for carrying out a display corresponding to input picture signals by causing a discharge to occur by repeatedly applying displaying pulses to each of said discharge cells of a plasma display panel comprising a plurality of discharge cells supporting display pixels (Paragraph [0043] explains that each sub-frame shown in Figure 3 contains an addressing period in which discharge is selectively made in a cell and then a sustaining period in which a number of pulses are applied to the cells lighted during the addressing period. {also see paragraph [0035]}), said method comprising:

an average brightness computing step for computing the average brightness of an image displayed in accordance with said input picture signals (Figure 6 and paragraph [0061] explain that the signal level detecting circuit 11 detects the average value V_{av} of the input picture signal.);

an illuminance detecting step for detecting an illuminance of said plasma display panel (Figure 6 and paragraph [0062] explain that the dynamic luminance controller 13 receives the signal BCA which corresponds to an external luminance signal.); and

a driving step for computing an application frequency at which said displaying pulse is to be applied using a conversion function, which has said average brightness and said illuminance as parameters, and applying said displaying pulse to each of said discharge cells in accordance with said application frequency (Figure 6 and paragraph [0062] explain that dynamic luminance controller 13 generates the luminance control signal BCONT corresponding to the peak and average values and the external luminance adjustment signal BCA. Figure 1 then shows that the generated signal BCONT is supplied to the luminance frequency controller 2 which outputs the luminous frequency F_{sus} to the driving controller 3, which in turn controls the address driver 7 through the signal address cnt.).

Kuriyama et al. fail to teach that the illuminance detecting step detects the ambient illuminance of the plasma display panel.

Slupe discloses a method of changing the frequency of the displaying pulse of a display panel by detecting an ambient light frequency (Figures 1 and 2 and column 4, lines 42-64 explain that a photosensor 182 senses ambient light and through computation the vertical refresh rate is changed, i.e. frequency of display.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to modify the external luminance adjustment signal in the plasma display panel driving method taught by Kuriyama et al. to be luminance detected

from an ambient light sensor as taught by Slupe in order to reduce the eyestrain produced on a user by minimizing excessive screen brightness and flicker of the display panel.

Regarding claim 13, Kuriyama et al. and Slupe disclose the plasma display panel driving method according to Claim 12.

Kuriyama et al. also disclose wherein said conversion function is expressed by superimposing a first conversion function for converting to an application frequency that makes said average brightness lower as said average brightness becomes higher, and a second conversion function for making said application frequency smaller as said illuminance becomes lower (As shown in Figure 2, the ABL level is 100% when F_{sus} is 30kHz, 50% when F_{sus} is 15kHz and 25% when F_{sus} is 7.5kHz. Figure 3 and paragraph [0046] explain that the number of sustaining pulses is changed with a change in frequency F_{sus} which correspondingly changes the average brightness. As explained in paragraphs [0047]-[0048], the luminance can be changed by changing the frequency F_{sus} in accordance with the luminance control signal BCONT. Therefore, when an outside luminance control signal detects that the screen needs to be darker, i.e. luminance lowered, the frequency is changed to 7.5kHz and less sustain pulses are applied in order to lower the luminance output of the screen, which lowers the average brightness of the screen.).

Regarding claim 14, Kuriyama et al. and Slupe disclose the plasma display panel driving method according to Claim 12.

Kuriyama et al. also disclose wherein the computing of said application frequency is carried out each frame period of said input picture signal (Paragraphs [0034]-[0035] the application frequency is determined every frame period since the driving occurs every frame period.).

Regarding claim 15, Kuriyama et al. and Slupe disclose the plasma display panel driving method according to Claim 12.

Kuriyama et al. also disclose wherein said conversion function achieves a fixed value said application frequency in a range in which said average brightness is lower than a prescribed brightness level (Figure 5 shows the conversion formulas used to determine the luminance control signal BCONT which controls the frequency F_{sus} . According to the formulas, when the average brightness is small the formula is fixed at $\frac{1}{4}V_R$, meaning that no matter how small the average voltage is the formula will always be the same.).

Regarding claim 16, Kuriyama et al. and Slupe disclose the plasma display panel driving method according to Claim 15.

Kuriyama et al. also disclose wherein said prescribed brightness level becomes smaller as said illuminance becomes smaller (As explained in the rejection of claim 13, when the luminance control signal identifies that the screen needs to be dark, that the

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frequency is lowered in order to lower the number of sustaining pulses such that the average brightness of the display screen will be lowered.).

Regarding claim 17, this claim is rejected under the same rationale as claims 1 and 2.

Regarding claim 18, this claim is rejected under the same rationale as claim 12.

Regarding claim 19, this claim is rejected under the same rationale as claim 13.

Regarding claim 20, this claim is rejected under the same rationale as claim 14.

Regarding claim 21, this claim is rejected under the same rationale as claim 15.

Regarding claim 22, this claim is rejected under the same rationale as claim 16.

Regarding claim 23, this claim is rejected under the same rationale as claim 17.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

13 July 2006

AMR A. AWAD
PRIMARY EXAMINER
